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PATENT APPLICATION

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IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Kemal GULER et al.

Confirmation No.: 9384

Application No.: 09/903,075

Examiner: Sara M. CHANDLER

Filing Date: 07/10/2001

Group Art Unit: 3693

Title: A METHOD AND SYSTEM FOR SELECTING AN OPTIMAL AUCTION FORMAT

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TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 12/18/2008.

☒ The fee for filing this Appeal Brief is \$540.00 (37 CFR 41.20).

☐ No Additional Fee Required.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month  
\$130

☐ 2nd Month  
\$490

☐ 3rd Month  
\$1110

☐ 4th Month  
\$1730

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of \$540. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

Respectfully submitted,  
Kemal GULER et al.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants:	Guler, et al.	Patent Application
Application No.:	09/903,075	Group Art Unit: 3693
Filed:	July 10, 2001	Examiner: Chandler, Sara M.
For: A METHOD AND SYSTEM FOR SELECTING AN OPTIMAL AUCTION FORMAT		

APPEAL BRIEF

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I. Real Party in Interest

The assignee of the present application is Hewlett-Packard Development Company, L.P.

## II. Related Appeals and Interferences

There are no related appeals or interferences known to the Appellants.

### III. Status of Claims

Claims 1-24 are pending. Claims 1-24 are rejected. This Appeal involves Claims 1-24.

#### IV. Status of Amendments

All proposed amendments have been entered. An amendment subsequent to the Final Action has not been filed.

## V. Summary of Claimed Subject Matter

Independent Claim 1 recites “A method for determining an auction format for a market,” which is described at least at Figures 2-9 and 12. “Selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders,” is described at least at page 35 lines 19-24; page 18 lines 4-19; 120 and 121 on Figure 12; 40 on Figure 4. “Selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, and said characteristics of said market based on segments of said historical auctions related to a specified item,” is described at least at 122, Figure 12; 50, Figure 5; page 40 lines 13-25; page 24 line 12 to page 25 line 3; page 16 lines 5 to 13; page 37 lines 8-22. “Selecting at least a first estimated structure of said market, which describes at least a first factor that affects how bidders behave, and a second estimated structure of said market, which describes a second factor that affects how bidders behave, at least in part by inverting said relevant bidding model,” is described at least at 123, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5; and page 16 line 19 to page 17 line 10. “Predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model,” is described at least at 124, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5. “Predicting a first outcome of said market based on said first bidding behavior,” is described at least at 125, Figure 12; 80, Figure 8; page 44 lines 7-20. “Predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model,” is described at least at 124, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5. “Predicting a second outcome of said market based on at least said second bidding behavior prediction,” is described at least at 125, Figure 12; 80, Figure 8; page 44 lines 7-20. “Determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market,” is described at least at 126, Figure 12; 90, Figure 9; page 45 lines 13-17.

Independent Claim 9 recites, “A computer system,” which is described at least at page 47 lines 1-8; Figures 2-10, and 12. “A market-characteristic-based-on-historical-auctions-selector 20 configured for selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders,” is described at least at page 35 lines 19-24; page 18 lines 4-19; 120 and 121 on Figure 12, 40 on Figure 4. “A relevant-bidding-model-selector-based-on-privately-held-bidder-information-and-based-on-segments-of-past-auctions 21 configured for selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said past auctions data, and said characteristics of said market based on segments of said past auctions related to a specified item,” is described at least at 122, Figure 12; 50, Figure 5; page 40 lines 13-25; page 24 line 12 to page 25 line 3; page 16 lines 5 to 13; page 37 lines 8-22. “An estimated-structure-of-market-selector 22 configured for selecting at least a first and a second estimated structure of said market, wherein said first estimated structure of said market describes at least a first factor that affects how bidders behave and wherein said second estimated structure of said market describes at least a second factor that affects how bidders behave,” is described at least at 123, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5; and page 16 line 19 to page 17 line 10. “A bidding-behavior-based-on-estimated-market-structure-predictor 31 configured for predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model,” is described at least at 124, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5. “A market-outcome-based-on-bidding-behavior-predictor 32 configured for predicting a first outcome of said market based on said first bidding behavior,” is described at least at 125, Figure 12; 80, Figure 8; page 44 lines 7-20. “Said bidding-behavior-based-on-estimated-market-structure-predictor 31 configured for predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model,” is described at least at 124, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5. “Said market-outcome-based-on-bidding-behavior-predictor 32 configured for predicting a second outcome of said market based on at least said second bidding behavior prediction,” is described at least at

125, Figure 12; 80, Figure 8; page 44 lines 7-20. “A determiner-of-auction-format-based-on-evaluating-market-outcome 34 configured for determining an auction format by evaluating said first outcome of said market and at least said second outcome of said market,” is described at least at 126, Figure 12; 90, Figure 9; page 45 lines 13-17.

Independent Claim 17 recites, “A computer readable medium having stored thereon computer-executable instructions for causing a computer system to execute the steps in a method for determining an auction format for a market,” which is described at least at Figures 2-9 and 12. “Selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders,” is described at least at page 35 lines 19-24; page 18 lines 4-19; 120 and 121 on Figure 12; 40 on Figure 4. “Selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, and said characteristics of said market based on segments of said historical auctions related to a specified item,” is described at least at 122, Figure 12; 50, Figure 5; page 40 lines 13-25; page 24 line 12 to page 25 line 3; page 16 lines 5 to 13; page 37 lines 8-22. “Selecting at least a first estimated structure of said market, which describes at least a first factor that affects how bidders behave, and a second estimated structure of said market, which describes a second factor that affects how bidders behave, at least in part by inverting said relevant bidding model,” is described at least at 123, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5; and page 16 line 19 to page 17 line 10. “Predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model,” is described at least at 124, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44 lines 1-5. “Predicting a first outcome of said market based on said first bidding behavior,” is described at least at 125, Figure 12; 80, Figure 8; page 44 lines 7-20. “Predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model,” is described at least at 124, Figure 12; 70, Figure 7; page 43 lines 15-22; page 44

lines 1-5. "Predicting a second outcome of said market based on at least said second bidding behavior prediction," is described at least at 125, Figure 12; 80, Figure 8; page 44 lines 7-20. "Determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market," is described at least at 126, Figure 12; 90, Figure 9; page 45 lines 13-17.

VI. Grounds of Rejection to Be Reviewed on Appeal

1. Claims 1, 9 and 17 are rejected under 35 U.S.C. §101.
2. Claims 1-24 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.
3. Claims 1-24 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particular point out and distinctly claim the subject matter which Appellants regard as their own.
4. Claims 1, 3, 4, 6-9, 11, 12, 14-17, 19, 20, 22-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,871,190 by Seymour (referred to hereinafter as “Seymour”).
5. Claims 2, 5, 10, 13, 18 and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Seymour in view of U.S. Patent No. 6,285,989 by Shoham (referred to hereinafter as “Shoham”).

## VII. Argument

### 1. Whether Claims 1, 9, and 17 are directed to non-statutory subject matter under 35 U.S.C. §101.

The Office Action asserts that “characteristics of said market,” “bidding behavior,” “how bidders behave,” “information held private by a bidder,” and “estimated structure of said market” are abstract ideas. Appellants respectfully submit that the features recited by independent Claim 1, 9 and 17 are quantifiable and measurable and the results of the recited embodiments are concrete and tangible for at least the reasons that independent Claims 1, 9 and 17 have amended to recite “selecting characteristics of said market based at least in part on stored historical data that includes data for historical auctions performed in the past for a plurality of bidders...selecting a relevant bidding model ...based on segments of said historical auctions related to a specified item...selecting ...estimated structure of said market...by inverting said relevant bidding model” and recite “...information held privately by a bidder, that is determined based at least in part on said historical auctions...”

Further, the section “Determine Whether the Claimed Invention Preempts a 35 U.S.C. 101 Judicial Exception (Abstract Idea, Law of Nature, or Natural Phenomenon)” of MPEP 2106 provides guidelines for determining whether an embodiment recited by a claim pertains to an abstract idea. These guidelines indicate that an idea is abstract if the recited embodiment results in “every ‘substantial practical application’ of an abstract idea.” Appellants respectfully submit that the embodiments recited by independent Claims 1, 9 and 16 are not abstract ideas because, among other things, the embodiments recited by independent Claims 1, 9 and 16 would not result in “every ‘substantial practical application’ of an abstract idea” for at least the reason that independent Claims 1, 9 and 16 recite “selecting characteristics of said market based at least in part on stored historical data that includes data for historical auctions performed in the past for a plurality of bidders...selecting a relevant bidding model ...based on segments of said historical auctions related to a specified item...selecting ...estimated structure of said

market...by inverting said relevant bidding model” and recite “...information held privately by a bidder, that is determined based at least in part on said historical auctions...”

The Office Action states in the third paragraph on page 7, “The method of claim 1 is not tied to any machine such as a computer system.” The Office Action goes on to state starting on the last line of page 7 “It is thus clear that the present statute does not allow patents to be issued ... that depend entirely on the use of mental processes...depend for their operation on human intelligence alone...” Appellants respectfully point out that Claim 1 recites features, such as “...stored historical bids data...,” which ties the method of Claim 1 to a machine. Further, various features, such as “...stored historical bids data...,” cannot not be performed using mental processes or by human intelligence alone.

2. Whether Claims 1-24 fail to comply with the written description requirement under 35 U.S.C. §112, first paragraph.

The Office Action reiterates a subset of the questions pertaining to the rejected claims that were asked in the Office Action dated September 5, 2007. Appellants provided answers to all of the original questions. However, the current Office Action reiterates a subset of the questions and provided no response to Appellants’ answers. Appellants respectfully request that the next Office Action fully reply to all of Appellants remarks instead of making global statements such as “they are not persuasive.”

Appellants also respectfully point out that MPEP 2163.04 states “The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant’s disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97” (emphasis added). Therefore, Appellants respectfully requests that if future Office Actions make rejections under 35 U.S.C. 112, first paragraph, that the future Office Actions accompany the rejections with a preponderance of evidence as to why a person skilled in the art would not recognize in Appellants’ disclosure a

description of the invention defined by the claims instead of asking Appellants' to answer a series of questions.

#### RESPONSE TO ARGUMENT'S SECTION

The Office Action states on page 25 under the 112, paragraph 1 section, Applicant's arguments have been fully considered but they are not persuasive.

The claimed invention says the relevant bidding model specifies bidding behavior as a function of (a) information held privately by a bidder and (b) characteristics of the market. The specification says the bidding model specifying a bidding behavior is a function of (a) the characteristics of the auction and (b) market structure of the auction. The specification does not support this limitation of the invention as claimed because the requirements of the relevant bidding model that specifies past bidding behavior are different.

Appellants respectfully traverse. Appellants respectfully point out that the specification does provide support for "selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder ...and said characteristics of said market..." at page 24 lines 12-20, among other places, which states,

A bidding model specifies bidding behavior as a function of information held by a bidder and the characteristics of the market structure.

Part of the information held by a bidder is inherently private, that is, is known only by the bidder himself/herself and not observed by other participants.

#### 3. Whether Claims 1-24 fail to particular point out and distinctly claim subject matter under 35 U.S.C. §112, second paragraph.

Appellants respectfully point out that Claims 1-24 provide proper antecedent basis for the various elements recited by the embodiments of Claims 1-24. Therefore, Claims 1-24 do point out and distinctly claim the subject matter which Appellants regard as their own.

The Office Action reiterates a subset of the questions pertaining to the rejected claims that were asked in the Office Action dated September 5, 2007. Appellants

provided answers to all of the original questions. However, the current Office Action reiterates a subset of the questions and provided no response to Appellants' answers. Appellants respectfully request that the next Office Action fully reply to all of Appellants remarks instead of making global statements such as "they are not persuasive."

Appellants also respectfully point out that although Claims 1-24 are rejected under 35 U.S.C. §112, second paragraph, the questions indicate that the Office Action intended to reject the Claims under 35 U.S.C. §112, first paragraph. Appellants respectfully direct the reader to Appellants' remarks under the 35 U.S.C. §112, first paragraph section of this Appeal Brief.

4. Whether Claims 1, 3, 4, 6-9, 11, 12, 14-17, 19, 20, 22-24 are unpatentable under 35 U.S.C. §103(a) in view of Seymour.

Appellants respectfully submit that embodiments of the present invention are neither taught nor suggested by Seymour.

"As reiterated by the Supreme Court in KSR, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries" including "[a]scertaining the differences between the claimed invention and the prior art" (MPEP 2141(II)). "In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious" (emphasis in original; MPEP 2141.02(I)). Appellant notes that "[t]he prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art" (emphasis added; MPEP 2141(III)).

“[A] reference will teach away if it suggests that the line of development flowing from the reference’s disclosures is unlikely to be productive of the result sought by the applicant. *In re Gurley*, 31 USPQ2d 1130 (Fed. Cir. 1994).”

Appellants respectfully note that “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention” (emphasis in original; MPEP 2141.02(VI); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)).

Independent Claim 1 recites,

A method for determining an auction format for a market, said method comprising the steps of:

selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders;

selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, and said characteristics of said market based on segments of said historical auctions related to a specified item;

selecting at least a first estimated structure of said market, which describes at least a first factor that affects how bidders behave, and a second estimated structure of said market, which describes a second factor that affects how bidders behave, at least in part by inverting said relevant bidding model;

predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a first outcome of said market based on said first bidding behavior;

predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a second outcome of said market based on at least said second bidding behavior prediction; and

determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market.

## SEYMOUR

This section describes Appellants’ understanding of what Seymour teaches. Appellants understand Seymour to teach an interactive auction system that

automatically generates buying and selling strategies based on input relating to the merchandise to be auctioned (Col. 2 lines 41-43). For example, Appellants understand Seymour to generate evolved strategies for all possible price scenarios based on the merchandise at the auction (and therefore going to be auctioned in the future) and for each type of auction type using genetic algorithms (Col. 4 lines 40-64). The evolved strategies are used to generate specific bidding and selling strategies based on specific data provided by specific bidders and sellers (Col. 5 lines 11-16). In other words, a specific bidding strategy is generated based on data from a specific bidder and a specific selling strategy is generated based on data from a specific seller.

Appellants understand Seymour to provide more information on generating a specific bidding strategy based on data provided by a specific bidder at Col. 5 line 63 to Col. 6 line 39.

Appellants understand Seymour to provide more information on generating a specific selling strategy based on data provided by a specific seller at Col. 6 lines 39-64. More specifically, with reference to Figure 5 of Seymour, at step 204, data is entered into the system by a specific seller concerning the item the seller wishes to sell. This information includes the minimum price the seller is prepared to accept (Col. 6 lines 46-52). At step 206, an optimum auction type for the auction is generated by a selling strategy generator based on the data provided by the specific seller (col. 6 lines 56-64). In particular, an optimum value is generated by the selling strategy generator 54 based on data provided solely by the specific seller. Further, Appellants understand Seymour to teach that the optimum type of auction is determined solely on data provided by a specific seller (Col. 6 lines 56-62).

Referring to Col. 3 lines 1-7, Appellants understand Seymour to teach that agents are used to implement the specific bidder strategies and specific seller strategies and that the agents interact to perform the auction.

#### DIFFERENCES BETWEEN SEYMOUR AND CLAIM 1

This section describes Appellants' understanding of at least some of the differences between what Seymour teaches and the embodiment recited by independent Claim 1. Appellants understand Seymour to teach away from "selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders" (emphasis added). For example, Appellants understand Seymour to teach information that pertains to merchandise that is at an auction, and therefore going to be auctioned in the future, and information that is provided by specific bidders and specific sellers who are interested in participating in a future auction.

Since, Appellants understand Seymour to teach a bidding strategy that is generated based on specific data provided by a specific bidder and a selling strategy that is generated based on specific data provided by a specific seller (Col. 5 lines 11-15), Appellants understand Seymour to teach away from "selecting a market strategy based on stored historical bids data that includes data for bids performed in the past by a plurality of bidders," (emphasis added).

Appellants understand Seymour to teach away from "information held privately by a bidder" (emphasis added). For example, Appellants understand Seymour to use three categories of inputted information. One category of information is provided by a specific bidder. A specific bidder would not be motivated to provide privately held information since that would put the bidder at a disadvantage. A second category of information pertains to merchandise that is at an auction and therefore would not qualify as "information held privately by a bidder, which is determined based at least in part on said historical auctions." Further, Seymour teaches using the information that pertains to merchandise at an auction as a part of generating evolved strategies for all possible price scenarios based on the merchandise that is at an auction. Since the evolved strategies are for all possible price scenarios, Appellants understand Seymour to teach away from "information held privately by a bidder." A third category of information is provided by a seller and therefore would not qualify as bidder information. Therefore, Appellants understand all three categories of Seymour's inputted information to teach away from "information held privately by a bidder" (emphasis added).

Since, Appellants understand Seymour to teach that the optimum type of auction is determined based solely on data provided by a specific seller (Col. 5 lines 56-62), Appellants understand Seymour to teach away from “determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market” as well as all of the other features of Claim 1 that are used as a part of predicting said first outcome of said market and predicting said second outcome of said market.

Further, since Appellants understand Seymour to teach a bidding strategy that is generated based on specific data provided by a specific bidder and a selling strategy that is generated based on specific data provided by a specific seller (Col. 5 lines 11-15) and to teach generating evolved strategies based on the merchandise that is at the auction (to be auctioned in the future), Appellants understand Seymour to teach away from “selecting a relevant bidding model... based on segments of historical auctions related to a specified item” (emphasis added).

Further, Appellants do not understand Seymour to teach, describe or suggest “selecting...a first estimated structure of said market...and a second estimated structure of said market...at least in part by inverting said relevant bidding model.” For example, the Office Action asserts that Seymour teaches selecting estimated structures of a market at Col. 4 lines 30-49 and Col. 5 lines 11-15. Appellants understand Seymour to teach at Col. 4 lines 30-49 generating evolved strategies based on certain assumptions to cover all possible price scenarios that could be achieved for the merchandise that is currently at an auction. Appellants understand Seymour to teach at Col. 5 lines 11-15 that the evolved strategies are used to generate specific bidding and selling strategies based on specific data provided by specific bidders and specific sellers. In contrast, Claim 1 recites, “selecting...a first estimated structure of said market...and a second estimated structure of said market...at least in part by inverting said relevant bidding model” (emphasis added).

Since Appellants do not understand Seymour to teach, describe or suggest “first and second estimated structures of said market,” Appellants respectfully submit

that Seymour does not teach, describe or suggest predicting bidding behaviors utilizing estimated structures of said market.

Further, Appellants understand Seymour to teach away from predicting bidding behaviors because the information that Seymour uses is either explicitly entered by the bidder, thus not predicted, pertains to merchandise at an action, thus is not based on a relevant bidding model that is determined based at least in part on analyzing said historical auctions, or does not qualify as bidder behavior as it pertains to a seller.

Since, Appellants do not understand Seymour to teach, describe or suggest predicting bidding behavior, Appellants do not understand Seymour to teach, describe or suggest predicting an outcome of a market based on a bidding behavior prediction.

Since Appellants understand Seymour to select an auction format based only on data provided by a specific seller, Appellants understand Seymour to teach away from “determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market.”

The Office Action states in the second paragraph on page 18 “... that it is old and well-known that information held by a buyer (e.g., amount they are willing to pay, risk tolerance etc.) coupled with their understanding of existing market conditions (e.g., rules, demand etc.) influences behavior...” However, Appellants do not understand the Official Notice to remedy the deficiency in the embodiment recited by Claim 1 for at least the reason that Appellants understand Seymour to teach away from “information held privately by a buyer.”

#### RESPONSE TO ARGUMENT’S SECTION

This section describes Appellants’ understanding of why the sections of Seymour cited in the response to argument’s section do not teach, suggest, or render obvious the embodiment recited by Claim 1. This section also includes

Appellants' response to the Office Action's statements that are a part of the Response to argument's section.

The Office Action states in the last paragraph on page 27, "Although not explicitly stated, the bidding strategy in Seymour (i.e., bidding model) makes selecting a bidding behavior as a function of information held privately by a bidder and said characteristics of said market obvious." Appellants respectfully disagree. Appellants understand Seymour to use three categories of inputted information. One category of information is provided by a specific bidder. A specific bidder would not be motivated to provide privately held information since that would put the bidder at a disadvantage. A second category of information pertains to merchandise that is at an auction and therefore would not qualify as "information held privately by a bidder, which is determined based at least in part on said historical auctions." A third category of information is provided by a seller and therefore would not qualify as bidder information. Therefore, Appellants do not understand Seymour to teach "selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder...and said characteristics of said market..."

The Office Action states in the last two sentences of the first paragraph of page 28 that Seymour teaches "information held privately by a bidder" at Col. 4 lines 30+-Col. 5 line 15. Appellants understand Seymour to teach at Col. 4 line 30-Col. 5 line 15 generating evolved strategies to cover all possible price scenarios for all types of auctions for the merchandise that is currently at an auction to be held in the near future. Seymour uses the evolved strategies in conjunction with data provided by a specific bidder to generate a specific bidding strategy for that specific bidder. Appellants respectfully submit that the evolved strategies would not teach "information held privately by a bidder, that is determined based at least in part on said historical auctions" because they cover all possible price scenarios and they are based on information for merchandise that is currently at an auction. Further, Appellants respectfully submit that the data provided by a specific bidder would not teach "information held privately by a bidder" because a bidder would not be motivated to divulge their private information, thus, putting them at a disadvantage in the auction.

The Office Action states in the last two sentences of page 28, “Although the private information and characteristics of the market are not explicitly discussed as being a function of the bidding behavior.” Appellants respectfully point out for clarification of the record that this is a misquotation of the embodiments recited by the claims.

The Office Action goes on to state at the last sentence of page 28 and proceeding to page 29, “It is old and well-known that information held by a buyer (e.g., amount they are willing to pay, risk tolerance etc.) coupled with their understanding of existing market conditions (e.g., rules, demand etc.) influences behavior.” Appellants respectfully submit that “selecting a relevant bidding model that specifies bidding behavior as a function of information held privately by a bidder” is not old and well known. Since Appellants understand Seymour to teach away from “selecting a relevant bidding model that specifies bidding behavior as a function of information held privately by a bidder,” Appellants understand Seymour to provide evidence that “selecting a relevant bidding model that specifies bidding behavior as a function of information held privately by a bidder” is not old and well known.

The Office Action states in the third paragraph on page 29, “The claimed invention states, ‘predicting a bidding behavior’ which is broad enough to cover the bidding behavior of all the various bidders.” First, Appellants respectfully point out for clarification of the record that the Office Action has misquoted the embodiments recited by the claims. Second, Appellants respectfully point out that “predicting ... a first bidding behavior...predicting...a second bidding behavior” utilizes respectively “first estimated structure of said market” and “second estimates structure of said market.” Further the estimated structures of said market are selected at least in part by inverting said relevant bidding model. Said relevant bidding model specifies past bidding behavior as a function of information held privately by a bidder and is selected based on segments of historical auctions related to a specified item. Therefore, the first bidding behavior and the second bidding behavior recited by Claim 1 would not cover “the bidding behavior of all the various bidders” as the Office Action asserts.

The Office Action states in the first paragraph, “[A] reference will teach away if it suggests that the line of development flowing from the reference’s disclosures is unlikely to be productive of the result sought by the applicant. *In re Gurley*, 31 USPQ2d 1130 (Fed. Cir. 1994).” In light of this, Appellants reiterate that Appellants understand Seymour to teach generating evolved strategies that cover all pricing scenarios for the merchandise that is currently at an auction that is to take place in the near future, teaches generating specific strategies for specific bidders and specific sellers based on specific data from the respective bidders and sellers. Therefore, Appellants understand Seymour to suggest a line of development that is unlikely to result in “selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on analyzing said historical auctions, and said characteristics of said market based on segments of said historical auctions related to a specified item” (emphasis added).

Further, since Appellants understand Seymour to teach that the auction format is determined solely on the basis of specific information obtained from a specific user, Appellants understand Seymour to suggest a line of development that is unlikely to result in “determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market.”

Appellants understand Seymour to teach away from many other recited features as discussed herein.

The Office Action states, “Applicant has a general allegation of long felt need...It is noted however, that an affidavit or declaration under 37 CFR 1.132 has not been submitted.” Appellants respectfully submit that since Appellants understand the only art cited by the Office Action to fail to teach and even teaches away from many of the features recited by the claims, Appellants understand this to be evidence of long felt need.

## SUMMARY

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Serial No.: 09/903,075

Group Art Unit: 3693

For at least these reasons that Appellants do not understand Seymour to teach “selecting characteristics of said market based at least in part on stored historical data that includes data for historical auctions performed in the past for a plurality of bidders...selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, ...based on segments of said historical auctions related to a specified item...selecting ...estimated structure of said market...by inverting said relevant bidding model...determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market” as recited by Claim 1, Appellants respectfully submit that independent Claim 1 should be patentable. Appellants respectfully submit that independent Claims 9 and 17 should also be patentable since independent Claim 9 recites, “a market-characteristic-based-on-historical-auctions-selector...a relevant-bidding-model-selector-based-on-privately-held-bidder-information-and-based-on-segments-of-past-auctions...a determiner-of-auction-format-based-on-evaluating-market-outcome...” and independent Claim 17 recites, “selecting characteristics of said market based at least in part on stored historical data that includes data for historical auctions performed in the past for a plurality of bidders...selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, ...based on segments of said historical auctions related to a specified item...selecting ...estimated structure of said market...by inverting said relevant bidding model.....determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market.”

Claims 1, 3, 4, 6, and 8 depend on Claim 1. Claims 11, 12, 14, 15 and 16 depend on Claim 9. Claims 19, 20, 22, 23 and 24 depend on Claim 17. These dependent claims include all of the limitations of their respective independent claims. Further, these dependent claims include additional limitations which further make them patentable. Therefore, these dependent claims should be patentable for at least the reasons that their respective independent claims should be patentable.

5. Whether Claims 2, 5, 10, 13, 18 and 21 are unpatentable under 35 U.S.C. §103(a) over Seymour in view of Shoham.

As discussed herein, Seymour does not teach, suggest, or render obvious the embodiments recited by independent Claims 1, 9 and 17 in that Seymour teaches away from the embodiments recited by independent Claims 1, 9 and 17. Since Seymour teaches away from the embodiments recited by independent Claims 1, 9 and 17, Seymour cannot be combined with any other art to remedy the deficiency in Seymour.

Claims 2 and 5 depend on independent Claim 1. Claims 10 and 13 depend on independent Claim 9. Claims 18 and 21 depend on independent Claim 21. These dependent claims include all of the features of their respective independent claims. Therefore, these dependent claims should be patentable for at least the reasons that their respective independent claims should be patentable.

### Conclusion

Appellants believe that pending Claims 1, 9 and 17 are directed to statutory subject matter under 35 U.S.C. 101. Appellants believe that Claims 1-24 comply with the written description requirement under 35 U.S.C. 112, first paragraph. Appellants believe that Claims 1-24 particular point out and distinctly claim subject matter which Appellants regard as their own under 35 U.S.C. 112, second paragraph. Appellants believe that pending Claims 1, 3, 4, 6-9, 11, 12, 14-17, 19, 20, 22-24 are patentable over Seymour. Appellants believe that pending Claims 2, 5, 10, 13, 18 and 21 are patentable over the combination of Seymour and Shoham. As such, Appellants submit that Claims 1-24 are patentable over the cited art.

Appellants respectfully request that the rejection of Claims 1-24 be reversed. The Appellants wish to encourage the Examiner or a member of the Board of Patent Appeals to telephone the Appellants' undersigned representative if it is felt that a telephone conference could expedite prosecution.

Respectfully submitted,  
Wagner Blecher LLP

Dated: February 18, 2009

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### VIII. Appendix - Clean Copy of Claims on Appeal

1. A method for determining an auction format for a market, said method comprising the steps of:

- selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders;
- selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, and said characteristics of said market based on segments of said historical auctions related to a specified item;
- selecting at least a first estimated structure of said market, which describes at least a first factor that affects how bidders behave, and a second estimated structure of said market, which describes a second factor that affects how bidders behave, at least in part by inverting said relevant bidding model;
- predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;
- predicting a first outcome of said market based on said first bidding behavior;
- predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;
- predicting a second outcome of said market based on at least said second bidding behavior prediction; and
- determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market.

2. The method as recited in Claim 1, wherein said selecting of said characteristics of said market step comprises the steps of:

- receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;
- accessing a database;
- retrieving said historical bids data from said database;

retrieving from said database auction characteristics data, wherein said auction characteristics data comprise information relating to historical auctions of similar items;

outputting said historical bids data; and  
outputting said auction characteristics data.

3. The method as recited in Claim 1, wherein said selecting of said relevant bidding model step comprises the steps of:  
receiving auction characteristics data;  
accessing a database;  
retrieving from said database said relevant bidding model, wherein said relevant bidding model is selected based on a corresponding relevance of said auction characteristics data; and  
outputting said relevant bidding model.

4. The method as recited in Claim 1, wherein said selecting of said first estimated structure of said market step comprises the steps of:  
receiving said relevant bidding model;  
receiving said historical bids data;  
expressing unobservable variables in terms of observable bids,  
wherein said unobservable variables are expressed in terms of said observable bids by inverting said relevant bidding model;  
transforming said historical bids data to a sample of inverted bids,  
wherein said historical bids data are transformed by inverting said relevant bidding model;  
estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said estimated latent structure of said market; and  
outputting said estimated latent structure of said market.

5. The method as recited in Claim 1, wherein said relevant bidding model has embedded an unknown structure, and wherein said predicting of said first bidding behavior step comprises the steps of:

receiving said estimated structure of said market;  
receiving said relevant bidding model;  
substituting said unknown structure with said estimated structure of said market; and  
outputting a prediction of bidding behavior.

6. The method as recited in Claim 1, wherein said predicting of said first outcome of said market step comprises the steps of:

receiving a second user input, wherein said second user input comprises:

an evaluation criterion;  
a candidate auction format; and  
a constraint;

receiving said first estimated structure of said market;  
receiving said first bidding behavior prediction for said candidate auction format, wherein said first bidding behavior prediction further comprises a prediction under said constraint;

obtaining a value of said evaluation criterion, wherein said value is based on said first estimated structure of said market, said first bidding behavior prediction, said candidate auction format, and said constraint, wherein said value comprising said first outcome of said market; and  
outputting said value.

7. The method as recited in Claim 1, wherein said evaluating of said first outcome and at least said second outcome of said market of said market step comprises the steps of:

receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;

receiving a predicted outcome for each of said candidate auction formats;

calculating descriptive statistics for each of said candidate auction formats, wherein said descriptive statistics comprise a mean and a variance;

ranking each of said candidate auction formats with respect to said calculated mean and generating corresponding rankings for said plurality of candidate auction formats; and  
outputting said descriptive statistics and said rankings.

8. The method as recited in Claim 7, wherein said evaluating said first outcome of said market and at least said second outcome of said market step further comprises the steps of:

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality of candidate auction formats having the highest of said rankings; and  
outputting said best auction format.

9. A computer system comprising:  
a market-characteristic-based-on-historical-auctions-selector configured for selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders;

a relevant-bidding-model-selector-based-on-privately-held-bidder-information-and-based-on-segments-of-past-auctions configured for selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said past auctions data, and said characteristics of said market based on segments of said past auctions related to a specified item;

an estimated-structure-of-market-selector configured for selecting at least a first and a second estimated structure of said market, wherein said first estimated structure of said market describes at least a first factor that affects how bidders behave and wherein said second estimated structure of said market describes at least a second factor that affects how bidders behave;

a bidding-behavior-based-on-estimated-market-structure-predictor configured for predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

a market-outcome-based-on-bidding-behavior-predictor configured for predicting a first outcome of said market based on said first bidding behavior;

said bidding-behavior-based-on-estimated-market-structure-predictor configured for predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

said market-outcome-based-on-bidding-behavior-predictor configured for predicting a second outcome of said market based on at least said second bidding behavior prediction; and

a determiner-of-auction-format-based-on-evaluating-market-outcome configured for determining an auction format by evaluating said first outcome of said market and at least said second outcome of said market.

10. The system as recited in Claim 9, wherein said market-characteristic-based-on-historical-auctions-selector is further configured for:

receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;

accessing a database;

retrieving from said database said historical bids data;

retrieving from said database auction characteristics data, wherein said auction characteristics data comprise information relating to historical auctions of similar items;

outputting said historical bids data; and

outputting said auction characteristics data.

11. The system as recited in Claim 9, wherein said relevant-bidding-model-selector-based-on-privately-held-bidder-information-and-based-on-segments-of-past-auctions is further configured for:

receiving auction characteristics data;

accessing a database;

retrieving from said database said relevant bidding model, wherein said relevant bidding model is selected based on a corresponding relevance of said auction characteristics data; and

outputting said relevant bidding model.

12. The system as recited in Claim 9, wherein said estimated-structure-of-market-selector is further configured for:

receiving said relevant bidding model;

receiving said historical bids data;

expressing unobservable variables in terms of observable bids,  
wherein said unobservable variables are expressed in terms of said  
observable bids by inverting said relevant bidding model;

transforming said historical bids data to a sample of inverted bids,  
wherein said historical bids data are transformed by inverting said relevant  
bidding model;

estimating an estimated latent structure of said market, wherein said  
sample of inverted bids receives application of statistical density estimation  
techniques to obtain said estimated latent structure of said market; and

outputting said estimated latent structure of said market.

13. The system as recited in Claim 9, wherein said bidding model has  
embedded an unknown structure, and wherein said bidding-behavior-based-on-  
estimated-market-structure-predictor is further configured for:

receiving said estimated structure of said market;

receiving said relevant bidding model;

substituting said unknown structure with said estimated structure of  
said market; and

outputting a prediction of bidding behavior.

14. The system as recited in Claim 9, wherein said market-outcome-based-  
on-bidding-behavior-predictor is further configured for:

receiving a second user input, wherein said second user input  
comprises:

an evaluation criterion;

a candidate auction format; and

a constraint;

receiving said first estimated structure of said market;  
receiving said first bidding behavior prediction for said candidate auction format, wherein said first bidding behavior prediction further comprises a prediction under said constraint;  
obtaining a value of said evaluation criterion, wherein said value is based on said first estimated structure of said market, said first bidding behavior prediction, said candidate auction format, and said constraint, wherein said value comprising said first outcome of said market; and  
outputting said value.

15. The system as recited in Claim 9, wherein said determiner-of-auction-format-based-on-evaluating-market-outcome is further configured for:

receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;  
receiving a predicted outcome for each of said candidate auction formats;  
calculating descriptive statistics for each of said candidate auction formats, wherein said descriptive statistics comprise a mean and a variance;  
ranking each of said candidate auction formats with respect to said calculated mean and generating corresponding rankings for said plurality of candidate auction formats; and  
outputting said descriptive statistics and said rankings.

16. The system as recited in Claim 15, wherein said determiner-of-auction-format-based-on-evaluating-market-outcome is further configured for:

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality of candidate auction formats having the highest of said rankings; and  
outputting said best auction format.

17. A computer readable medium having stored thereon computer-executable instructions for causing a computer system to execute the steps in a

method for determining an auction format for a market, said method comprising the steps of:

- selecting characteristics of said market based at least in part on stored historical bids data that includes data for historical auctions performed in the past for a plurality of bidders;

- selecting a relevant bidding model that specifies past bidding behavior as a function of information held privately by a bidder, that is determined based at least in part on said historical auctions data, and said characteristics of said market based on segments of said historical auctions related to a specified item;

- selecting at least a first estimated structure of said market, which describes at least a first factor that affects how bidders behave, and a second estimated structure of said market, which describes a second factor that affects how bidders behave, at least in part by inverting said relevant bidding model;

- predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

- predicting a first outcome of said market based on said first bidding behavior;

- predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

- predicting a second outcome of said market based on at least said second bidding behavior prediction; and

- determining said auction format for said market by evaluating said first outcome of said market and at least said second outcome of said market.

18. The computer readable medium as recited in Claim 17, wherein said selecting of said characteristics of said market step comprises the steps of:

- receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;

- accessing a database;

- retrieving from said database said historical bids data;

- retrieving from said database auction characteristics data, wherein said auction characteristics data comprise information relating to historical auctions of similar items;

outputting said historical bids data; and  
outputting said auction characteristics data.

19. The computer readable medium as recited in Claim 17, wherein said selecting of said relevant bidding model step comprises the steps of:

receiving auction characteristics data;  
accessing a database;  
retrieving from said database said relevant bidding model, wherein said relevant bidding model is selected based on a corresponding relevance of said auction characteristics data; and  
outputting said relevant bidding model.

20. The computer readable medium as recited in Claim 17, wherein said selecting of said first estimated structure of said market step comprises the steps of:

receiving said relevant bidding model;  
receiving said historical bids data;  
expressing unobservable variables in terms of observable bids,  
wherein said unobservable variables are expressed in terms of said observable bids by inverting said relevant bidding model;  
transforming said historical bids data to a sample of inverted bids,  
wherein said historical bids data are transformed by inverting said relevant bidding model;  
estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said estimated latent structure of said market; and  
outputting said estimated latent structure of said market.

21. The computer readable medium as recited in Claim 17, wherein said relevant bidding model has embedded an unknown structure, and wherein said predicting of said first bidding behavior step comprises the steps of:

receiving said estimated structure of said market;  
receiving said relevant bidding model;

substituting said unknown structure with said estimated structure of said market; and  
outputting a prediction of bidding behavior.

22. The computer readable medium as recited in Claim 17, wherein said predicting of said first outcome of said market step comprises the steps of:

receiving a second user input, wherein said second user input comprises:

an evaluation criterion;  
a candidate auction format; and  
a constraint;

receiving said first estimated structure of said market;  
receiving said first bidding behavior prediction for said candidate auction format, wherein said first bidding behavior prediction further comprises a prediction under said constraint;

obtaining a value of said evaluation criterion, wherein said value is based on said first estimated structure of said market, said first bidding behavior prediction, said candidate auction format, and said constraint, wherein said value comprising said first outcome of said market; and  
outputting said value.

23. The computer readable medium as recited in Claim 17, wherein said evaluating of said first outcome and at least said second outcome of said market of said market step comprises the steps of:

receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;

receiving a predicted outcome for each of said candidate auction formats;

calculating descriptive statistics for each of said candidate auction formats, wherein said descriptive statistics comprise a mean and a variance;

ranking each of said candidate auction formats with respect to said calculated mean and generating corresponding rankings for said plurality of candidate auction formats; and

outputting said descriptive statistics and said rankings.

24. The computer readable medium as recited in Claim 23, wherein said evaluating said first outcome of said market and at least said second outcome of said market step further comprises the steps of:

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality of candidate auction formats having the highest of said rankings; and  
outputting said best auction format.

IX. Evidence Appendix

No evidence is herein appended.

X. Related Proceedings Appendix

No related proceedings.